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# **INDIANA**

# **Epidemiology**

## **NEWSLETTER**

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Epidemiology Resource Center  
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## **Childhood Injuries From Power Lawn Mowers**

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Children receive injuries from lawnmowers in a variety of ways, but the most severe injuries frequently occur from contact with the rotating blades of the lawn mower. These injuries, like most unintentional injuries, can be avoided and prevented.

This report summarizes childhood (ages 2 years to 16 years) injuries due to power lawn mowers (including riding power lawn mowers) based on data from two separate sources: the National Electronic Information Surveillance System (NEISS) for the United States for 2000-2002, and the Indiana 2002 Hospital Discharge Database. NEISS, operated by the U.S. Consumer Product Safety Commission (CPSC), is a database representing a national probability sample of hospitals in the U.S. and its territories. Patient level information is collected from 66 NEISS hospitals for every emergency department visit involving an injury associated with a consumer product. In the 2002 Indiana hospital discharge database, an injury-related hospitalization from power lawn mowers is defined as any person who was assigned a principle diagnosis (ICD-9-CM) code ranging from 800-999 and a supplemental External Cause of Injury Code (E code) of E920.0. It should be noted that only 44% of injuries in the hospital discharge database have an E code, so the Indiana data may be an underestimate of the number of lawnmower injuries that actually occur. In addition, E code 920.0 does not differentiate between riding mowers and other power lawn mowers.

### **NEISS Database Analysis**

This analysis specifically focused on injuries related to **riding** mowers. Based on NEISS data, there were 112 U.S. children between the ages of 2 and 16 years who were treated in hospital emergency rooms from January 1, 2000 to December 31, 2002 for injuries sustained by riding power lawn mowers. Among these, 20 percent were either admitted for hospitalization or treated and transferred, presumably to another hospital. One child sustained injuries that resulted in death. Based on this data, NEISS estimates that 1,700 to 2,000 youth each year sustain riding lawn mower injuries in the U.S.

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NEISS case-specific data providing demographic information and surrounding circumstances is available only for year 2002. However, for previous years (2000-2001), there were 80 children between the ages of 2 and 16 years who presented in a hospital emergency department for riding mower injuries. Among these, 19 percent (15) were hospitalized or transferred. In 2001, 62 percent (8/13) of the children admitted for hospitalization were between the ages of 2 and 7 years. Four had injuries serious enough to require amputation and two were admitted for deep lacerations.

In our analysis of the U.S. case-specific data for 2002, 32 children were evaluated in a hospital emergency department for riding mower injuries. Among these 24 were treated and released, 7 were admitted for hospitalization or treated and transferred, and 1 died while in the ED, thus 25% received injuries resulting in hospitalization or death. It should be noted that among the 7 hospitalized or transferred, **six were age 3 to 5 years (86%)**. The majority of these preschooler injuries involved deep cutting traumatic injuries of the feet and toes, 5 of which required some degree of amputation. The patient who died was an 11-year-old who sustained a fracture in the neck from running into a branch while operating the riding mower.

Among those treated and released (n=24) in 2002, males dominated by a 2 to 1 ratio. The ages ranged from 5 to 15 years, with one-fourth under age 6 years. Forty-one percent (10) of the injuries resulted in lacerations. Other injuries included contusions and abrasions (8), fractures (2) and other unspecified injuries (4). The majority of the injuries were to the legs, feet, or toes. Other injuries were to the hand or fingers (5), head or face (5), trunk or shoulder (3), and total body (1). Common circumstances resulting in injury included 7 children (29%) operating the riding mower, which then flipped over or ran over a body part (age range from 8 to 15 years) and another 7 cases where a parent or relative was operating the riding mower with a child aboard, where the child fell off and sustained an injury, usually through contact with the mower blades (age range from 3 to 9 years). Two cases involved a mower collision with another object or vehicle containing a child, who then received injury from contact with the mower. Other cases include 2 children with cuts to the finger from touching the mower blade in the store, a 3-year-old who burned her hand by touching the hot exhaust vent after mowing was completed, and 5 injuries which did not involve mower blade contact.

## **Hospitalizations, Indiana hospital discharge database, 2002**

In Indiana, there were 13 people admitted for hospitalization due to power lawn mower-related injuries, based on a query for injury hospitalizations resulting from power lawn mowers. Hospitalizations were more frequent among males (77 percent) and ages ranged from 4 to 55 years. Four cases (or 30 percent) involved children and adolescents age 4 to 15 years. Injuries included amputation (toe), fracture, open wound of the chest wall, and complicated wound of the foot. As noted less than half of all injury-related hospitalizations are E coded, so the 13 admissions may be a low figure.

## **Conclusion**

Power mower-related injuries frequently occur among children and are more common among males. Parent surveys completed in the early 1980s revealed that one-third of parents allowed their child in the yard while the lawn mower was in use—in suburban and rural areas this figure was 46%. Childhood power mower injuries occur from young children falling or slipping into the operating mower blade while playing and running nearby, by riding mowers running over children who fall off while riding on them, by mowers placed into reverse and the operator is not aware a child is behind them, and by rocks or other objects thrown by the mower striking a child, especially in the eyes or the head. In this study of NEISS 2002 data, 6 out of 10 children injured resulted from circumstances where the school-age child or young adolescent was either operating the mower or the younger child was riding on the mower with a parent who was the operator.

**In Indiana, 30% of the 2002 cases involved children below 16 years of age, who represent only 20% of the population, thus youth are disproportionately affected by these maiming injuries resulting mainly from riding mowers. Of special concern, supported by the U.S. data extracted from the NEISS database, are the 20% of children in 2001-2002 who required hospitalization due to the severity of their injuries, with the majority (70%) being between the ages of 2 and 7 years.** Many of the injuries from mower blade contact require amputation of portions of the foot or toes. These injuries frequently require multiple surgical operations to repair the body parts affected, and an extensive rehabilitation program to regain body function. The aftermath from the severe cutting/amputation injuries often results in permanent disfigurement. The resulting injury, or death following an injury, can be emotionally overwhelming, especially when the injuries relate to the mower being operated by a parent or relative of the victim. Prevention of such injuries should be included in all injury prevention efforts.

To prevent these injuries from occurring among children, the American Academy of Pediatrics recommends the following tips:

- While the lawn is being mowed, keep others, especially young children, away to ensure their safety.
- Do not allow children younger than 14 to use riding mowers. Do not allow children younger than 12 to use walk-behind mowers.
- Only use a power mower with a control that stops the mower if the handle is released. This control should never be disconnected.
- Make sure that blade settings (to set the wheel height or dislodge debris) are done by an adult with the mower off and the spark plug removed or disconnected.
- Prevent injuries from flying objects, such as stones or toys, by picking up objects from the lawn before mowing begins. Use a collection bag for grass clippings or a plate that covers the opening where cut grass is released. Have anyone who uses a mower wear protective eyewear.
- Make sure that sturdy shoes (not sandals or sneakers) are worn while mowing.
- Start and refuel mowers outdoors, not in a garage or shed. Mowers should be refueled with the motor turned off and cool.

## Commentary

Each spring emergency department and pediatric staff in hospitals begin to see injuries related to power lawn mowers, which then continue through the warm weather months when grass is growing. Twenty years ago one of the authors (CG) investigated children admitted to one Indianapolis hospital who sustained riding mower injuries as described above (preschoolers predominately affected by debilitating injuries), and it is discouraging that such injuries continue to occur. Especially alarming is the disproportionate share of young children and adolescents affected, and the severe injuries that preschool-age children receive from riding mowers. Health care providers need to educate families about the injury risks posed by power lawn mowers, particularly riding mowers. They also need to emphasize that young children should not be allowed in the yard or area being mowed while the mower is in operation because young children have no realistic concept of the dangers of power mowers. Children should never be allowed to “go for a ride” on the riding mower, as the risk of falling into the path of the mower blade is high. Families are often more aware of the risk of an object being propelled by a mower than of the severe cutting force posed by the rotating mower blade. The majority of power mower-related injuries are preventable, and certainly the injuries sustained by young children are entirely preventable if children are not allowed in the vicinity of the mower.

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## **It's National Minority Health Month**



In an effort to eliminate health disparities and improve the health status of Minority populations, the 107th Congress, in H. Con. Res. 388 agreed on October 3, 2002 to establish a National Minority Health and Health Disparities Month. Many states and organizations are celebrating National Minority Health and Health Disparities Month in April. National Minority Health and Health Disparities Month is raising the awareness surrounding minority health issues.

National Minority Health and Health Disparities Month addresses the health needs of African Americans, Hispanics, Asians, American Indians/Alaska Natives, Native Hawaiians and Pacific Islanders.

Despite considerable progress in societal attitudes and laws regarding racial and gender prejudice over the last century, national health statistics continue to show a disproportionate number for people of color and women who experience limited access to health care and present poor health outcomes, compared to the general population of the United States. In addition to health disparities, economic disparities and lack of health insurance coverage continue to greatly affect women and communities of color.

The demographic changes anticipated over the next decade magnify the importance of addressing disparities in health status. Those groups currently experiencing inferior health are expected to grow as a proportion of the total U.S. population. The future health of America as a whole will be influenced substantially by improving the health of these racial and ethnic minorities. A national focus on disparities in health status is particularly important as major changes unfold in the way in which health care is delivered and financed.

Some of the goals of the National Minority Health Month include building public/private partnerships, foster cultural competency among health care providers, encourage health education and training and expand the use of state-of-the-art technology.



## *News From the Field*

### **Putting the Plan to the Test**

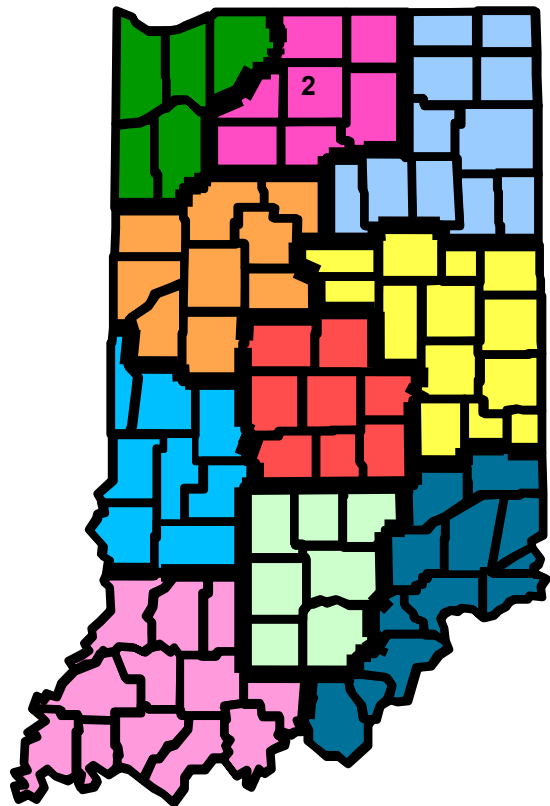
Tom Duszynski  
ISDH Field Epidemiologist  
District 2

During the last year, local health departments, emergency management agencies and hospitals throughout Indiana have been working diligently to develop mass prophylaxis plans for each county. These plans were developed in response to the potential need to prophylax or vaccinate all Indiana residents within four days. The initial plan addressed administering smallpox vaccine in the event of the re-emergence of smallpox. Currently, plans are being developed that could be used in response to any public health emergency.

All county mass prophylaxis plans were submitted to the Indiana State Department of Health by April 2, 2004. These plans have to be considered living documents that need to be revised, enhanced and tested to ensure that they are viable and manageable.

Dr. Janice Carson, Health Officer of St. Joseph County, has decided to put that county's plan to a full-scale test. In late May, the St. Joseph County Health Department will be conducting a half-day bioterrorism drill to test the St. Joseph County mass prophylaxis plan and determine the total number of patients that can be processed in the clinic in one hour. **In order for this drill to be successful, many volunteers from around the state are needed.** There will be no observers for this exercise. Anyone wishing to see how the clinic will work will participate as a patient and go through the clinic process. The St. Joseph County Health Department hopes to have approximately 300 individuals who can participate. Volunteers are needed to help staff the clinic as either mass prophylaxis clinic volunteers or as potential clients in the clinic.

**If you or your county officials are interested in participating in this important trial, please contact Heather Kuehnle, BT Coordinator/Epidemiologist for the St. Joseph County Health Department at 1-574-245-6744 or at [hkuehnle@co.st-joseph.in.us](mailto:hkuehnle@co.st-joseph.in.us).** You will be sent an invitation with date, time and place. This is a great learning opportunity for all who have developed plans over the past year.





## *Training Room*

### **Foodborne Illness Investigation Manuals and Training Available!**

The Foodborne Illness Investigation training has been set! Participants may attend any of the following sessions:

Wednesday, May 19	Best Western	Kendallville
Tuesday, May 25	Indian Oaks Resort	Chesterton
Wednesday, June 2	Holiday Inn	Jasper
Tuesday, June 8	Best Western	Scottsburg
Monday, June 14	Adam's Mark (downtown)	Indianapolis

Representatives from the ISDH Epidemiology Resource Center and Food Protection Program will present information on disease agents, surveillance, foodborne complaints, epidemiological investigation, and environmental investigation. The training will conclude with a tabletop exercise based on an actual outbreak. There will be no registration fee for this one-day training. Local health department environmental health specialists and public health nurses are especially encouraged to attend. Sign-in will begin at 8:30 am. Each participant will receive a folder with presentation handouts, an agenda, and an evaluation form. The program will begin promptly at 8:50 am and conclude by 4:30 pm.

Prior to the training, each local health department will receive two copies of the second edition of the Foodborne Training Investigation Reference Manual. Additional copies will be available to local health departments upon request as long as supplies last. In addition to an extensively revised text, the manual will also include updated contact information, charts, forms, and references.

To register for the training, please e-mail Pam Pontones at [ppontones@isdh.state.in.us](mailto:ppontones@isdh.state.in.us) or call 317-233-7009 at least one week prior to the scheduled training session. This will ensure that there are enough training materials for everyone.

**Indiana State Department of Health  
Immunization Program  
Presents:**

**“Child and Adolescent  
Immunizations from A to Z”**

The ISDH Immunization Program and Health Educators are offering this free, one-day educational course on all aspects of immunization practices. Topics include:

- Principles of Vaccination
  - Overview of the immune system
  - Classification of vaccines
- An overview of Vaccine-Preventable Diseases
- General Recommendations on Immunization
  - Timing and spacing
  - Contraindications and precautions to vaccination
- Safe and Effective Vaccine Administration
  - Prior to administration
  - Administration
  - Documentation and reminder/recall
  - Adverse Events
- Safe Vaccine Storage and Handling
- Indiana Requirements
  - Schools
  - Day care/Head start
  - Exemptions
- Tools to read Immunization Records
- Vaccine Misconceptions
  - MMR and autism
  - Thimerosal and mercury
  - Overloading the immune system
  - Influenza vaccine
- Reliable Resources

This course is designed for all immunization providers and staff. Presentation of this course takes six hours or can be customized to provide the components needed for your office or clinic staff. A training manual and certificate of attendance is provided to all attendees.

Courses are held throughout Indiana about four times per month (see schedule next page). All persons involved in immunizations are encouraged to attend a course in their area. Registration is required. To attend or schedule/host a course in your area, or for more information on “Child and Adolescent Immunizations from A to Z” and other immunization education opportunities, please contact:

Beverly Sheets  
317-501-5722  
[hepbbev@aol.com](mailto:hepbbev@aol.com)

### **CALENDAR 2004 IMMUNIZATIONS FROM A TO Z**

**April 23, 2004 "Immunization A-Z" Delaware County, Muncie, 9 AM - 3 PM (full)**

**April 28, 2004 "Immunization A-Z" IU Med Grp, Indianapolis, 8 AM - 12 PM (full)**

**April 30, 2004 "Immunization A-Z" Decatur Co. Hospital, Greensburg 9am-3 pm**

**May 7, 2004 "Immunization A-Z" ISDH Rice Auditorium, 9 AM - 3 PM (full)**

**May 18, 2004 "Immunization A-Z" Montgomery Co, Crawfordsville, 9 am-3 pm.**

**May 26, 2004 "Immunization A-Z" Madison Co, Anderson, 9 AM-3 PM**

**June 2, 2004 "Immunization A-Z" Boone co, Lebanon, 9 AM-3PM**

**June 11, 2004 "Immunization A-Z" Wayne Co, Richmond, 9 AM-3 PM**

**June 15, 2004 "Immunization A-Z" Jay Co., Portland, 9 AM- 3 PM**

**June 23, 2004 "Immunization A-Z" Vigo Co, Terre Haute, 9 AM-3 PM**

**Sept.1, 2004 "Immunization A-Z" Lake Co, 9AM-3PM**

**Sept. 15, 2004 "Immunization A-Z" Indpls. Medical Mgmt. (full)**

**Sept. 17, 2004 "Immunization A-Z" ISDH Rice Auditorium, 9 AM-3PM**

**NOTE: NO COURSES WILL BE SCHEDULED FOR JULY AND AUGUST.**

**NOTE: THERE IS NO CHARGE FOR ANY OF THESE EVENTS**

**NOTE: YOU MUST REGISTER FOR THESE EVENTS. TRAINING MATERIALS ARE PROVIDED.**

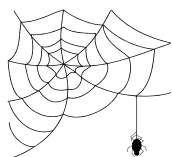
**NOTE:** NO county courses will be scheduled for July and August.

There is NO CHARGE for any of these events.

**YOU MUST REGISTER** for these events. Training materials are provided.

Contact Beverly Sheets at (317) 501-5722 or email [hepbbev@aol.com](mailto:hepbbev@aol.com) for further information and to schedule "Immunizations From A -Z" and other immunization events in your area.





## *Wonderful Wide Web Sites*

### **ISDH Data Reports Available**

**The ISDH Epidemiology Resource Center has the following data reports and the Indiana Epidemiology Newsletter available on the ISDH Web Page:**

[http://www.statehealth.in.gov/dataandstats/epidem/epinews\\_index.htm](http://www.statehealth.in.gov/dataandstats/epidem/epinews_index.htm)

Indiana Cancer Incidence Report (1990, 95,96, 97)	Indiana Marriage Report (1995, 97, 98, 99, 2000)
Indiana Cancer Mortality Report (1990-94, 1992-96)	Indiana Mortality Report (1999, 2000)
Indiana Health Behavior Risk Factors (1995-96, 97, 98, 99, 2000, 2001)	Indiana Natality Report (1995, 96, 97, 98, 99, 2000, Provisional 2001)
Indiana Health Behavior Risk Factors (BRFSS) Newsletter	Indiana Induced Termination of Pregnancy Report (1998, 99, 2000)
Indiana Hospital Consumer Guide (1996)	Indiana Infectious Diseases Report (2000)
Public, Hospital Discharge Data (1999, 2000, 2001)	<i>Former</i> Indiana Report of Diseases of Public Health Interest (1996, 97, 98, 99)
Indiana Maternal & Child Health Outcomes & Performance Measures (1988-97, 1989-98, 1990-99, 1991-2000)	

## **HIV** Disease Summary

**Information as of March 31, 2004 (based on 2000 population of 6,080,485)**

### *HIV - without AIDS to date:*

340	New HIV cases from April 2003 thru March 2004	12-month incidence	5.59 cases/100,000
3,823	Total HIV-positive, alive and without AIDS on March 31, 2004	Point prevalence	62.88 cases/100,000

### *AIDS cases to date:*

447	New AIDS cases from April 2003 thru March 2004	12-month incidence	7.35 cases/100,000
3,688	Total AIDS cases, alive on March 31, 2004	Point prevalence	60.66 cases/100,000
7,531	Total AIDS cases, cumulative (alive and dead)		

## REPORTED CASES of selected notifiable diseases

Disease	Cases Reported in March MMWR Week 10-13		Cumulative Cases Reported January - March MMWR Weeks 1-13	
	2003	2004	2003	2004
Campylobacteriosis	22	36	43	77
Chlamydia	1,167	1,370	4,259	4,609
<i>E. coli</i> O157:H7	4	3	7	10
Hepatitis A	6	1	10	5
Hepatitis B	4	1	4	3
Invasive Drug Resistant <i>S. pneumoniae</i> (DRSP)	32	13	43	41
Invasive pneumococcal (less than 5 years of age)	5	8	10	15
Gonorrhea	427	466	1,620	1,647
Legionellosis	2	2	3	4
Lyme Disease	1	0	3	0
Meningococcal, invasive	8	3	12	8
Pertussis	3	7	7	11
Rocky Mountain Spotted Fever	0	0	0	0
Salmonellosis	27	38	54	81
Shigellosis	15	30	24	43
Syphilis (Primary and Secondary)	2	3	8	12
Tuberculosis	8	11	29	36
Animal Rabies	0	0	2 (bats)	1 (bat)

For information on reporting of communicable diseases in Indiana, call the *ISDH Epidemiology Resource Center* at (317) 233-7665.

**Indiana**  
***Epidemiology***  
**Newsletter**

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